

ATTORNEY DOCKETING  
068069.0117



PATENT APPLICATION  
10/005,998

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: Mohammed N. Islam  
Serial No.: 10/005,998  
Filing Date: December 3, 2001  
Group Art Unit: Unknown  
Examiner: Unknown  
Title: METHOD AND APPARATUS FOR SCHEDULING  
COMMUNICATION USING A STAR SWITCHING FABRIC

Assistant Commissioner  
for Patents  
Washington, DC 20231

Dear Sir:

**INFORMATION DISCLOSURE STATEMENT**

Applicant respectfully requests, pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, that the references listed on the attached PTO-1449 form be considered and cited in the examination of the above-identified patent application. Copies of the references are enclosed for the convenience of the Examiner. No representation is made that a search has been made, that the references are material to the patentability of the present application, or that the references qualify as prior art.

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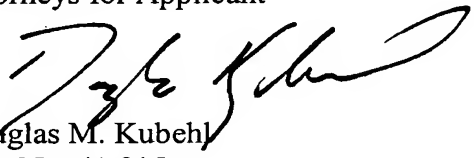
PATENT APPLICATION  
10/005,998

**REMARKS**

This Information Disclosure Statement is being submitted pursuant to 37 C.F.R. § 1.97(b) before the issuance of a first Office Action and, therefore, no fee is believed to be due. If, however, a fee is due, the Commissioner is hereby authorized to charge such fee to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

Baker Botts L.L.P.  
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Date: January 31, 2002



PTO-1449  <b>Information Disclosure Citation in an Application</b>	Application No. <b>10/005,998</b>	Applicant(s) <b>Mohammed N. Islam et al.</b>	
	Docket Number <b>068069.0117</b>	Group Art Unit	Filing Date <b>December 3, 2001</b>

**U.S. PATENT DOCUMENTS**

		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	A	3,986,020	10/12/1976	Kogelnik	250	199	09/25/1975
	B	4,797,879	01/10/1989	Habbab et al.	370	3	06/05/1987
	C	4,873,681	10/10/1989	Arthurs et al.	370	3	01/26/1988
	D	4,970,714	11/13/1990	Chen et al.	370	17	01/05/1989
	E	5,005,167	04/02/1991	Arthurs et al.	370	4	10/11/1989
	F	5,063,612	11/05/1991	McKeown	455	607	08/03/1990
	G	5,140,655	08/18/1992	Bergmann	359	120	12/28/1990
	H	5,093,743	03/03/1992	Eng et al.,	359	578	02/21/1989
	I	5,103,340	04/07/1992	Dono et al.	385	46	08/07/1991
	J	5,191,626	03/02/1993	Stern	385	24	04/22/1991
	K	5,206,638	04/27/1993	McKeown	340	825.510	01/28/1991
	L	5,257,113	10/26/1993	Chen et al.	358	426	09/20/1991
	M	5,301,052	04/05/1994	Audouin et al.	359	124	01/24/1992
	N	5,343,542	08/30/1994	Kash et al.	385	31	04/22/1993
	O	5,361,254	5,361,254	Storck et al.	370	57	11/30/1992

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		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	P	0 412 220 A1	11/08/1989	EP	H04L	12/44	X	<input checked="" type="checkbox"/>
	Q	0 439 646 A1	30/01/1990	EP	H04L	12/44	X	<input checked="" type="checkbox"/>
	R	0 419 840 A2	22/08/1990	EP	H04L	12/56	X	<input checked="" type="checkbox"/>

**NON-PATENT DOCUMENTS**

	DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
S	Arthurs et al., "HYPASS: An Optoelectronic Hybrid Packet Switching System," IEEE Journal on Selected Areas in Communications, Vol. 6, No. 9, pp. 1500-1510	12/1988

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

U.S. PATENT AND TRADEMARK OFFICE



PTO-1449

**Information Disclosure Citation  
in an Application**Application No.  
**10/005,998**Applicant(s)  
**Mohammed N. Islam et al.**Docket Number  
**068069.0117**

Group Art Unit

Filing Date  
**December 3, 2001****U.S. PATENT DOCUMENTS**

		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	A	5,452,115	09/19/1995	Tomioaka	359	123	04/22/1994
	B	5,455,699	10/03/1995	Glance et al.	359	125	12/21/1993
	C	5,455,701	10/03/1995	Eng et al.	359	135	03/28/1994
	D	5,485,297	01/16/1996	Sotom	359	123	10/09/1992
	E	5,500,858	03/19/1996	McKeown	370	60	12/20/1994
	F	5,506,712	04/09/1996	Sasayama et al.	359	123	07/14/1994
	G	5,515,361	05/07/1996	Li et al.	370	15	02/24/1995
	H	5,519,526	05/21/1996	Chua et al.	359	152	10/21/1992
	I	5,521,732	05/28/1996	Nishio	359	120	06/08/1994
	J	5,539,559	07/23/1996	Cisneros et al.	359	117	08/21/1992
	K	5,729,527	03/17/1998	Gerstel et al.	370	228	03/19/1996
	L	5,739,945	04/14/1998	Tayebati	359	291	09/27/1996
	M	5,781,537	07/14/1998	Ramaswami et al.	370	254	07/07/1995
	N	5,793,746	08/11/1998	Gerstel et al.	370	228	04/29/1996
	O	5,825,949	10/20/1998	Choy et al.	385	24	04/03/1997

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							YES	NO
	P	2-278132	14/11/1990	JP	H01S	003/08	X	
	Q	6-350563	22/12/1994	JP	H04J	014/02	X	
	R	0 667 690 A2	24/01/1995	EP	H04J	14/02	X	

**NON-PATENT DOCUMENTS**

		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
	S	Chen et al., "A Media-Access Protocol for Packet-Switched Wavelength Division Multiaccess, Metropolitan Area Networks," IEEE Journal on Selected Areas in Communications, Vol. 8, No. 6, pp. 1048-1057	08/1990

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	A	5,847,852	12/08/1998	Domon et al.	359	118	03/05/1997
	B	5,864,414	01/26/1999	Barnsley et al.	359	125	07/26/1996
	C	5,889,600	03/30/1999	McGuire	359	128	10/24/1994
	D	5,915,054	06/22/1999	Ota	385	46	06/02/1995
	E	55,923,644	07/13/1999	McKeown et al.	370	230	10/03/1996
	F	5,926,299	07/20/1999	Bayart et al.	359	121	12/24/1996
	G	5,949,801	09/07/1999	Tayebati	372	20	07/22/1998
	H	6,025,944	02/15/2000	Mendez et al.	359	136	03/27/1997
	I	6,025,950	02/15/2000	Tayebati et al.	359	244	07/27/1998
	J	6,041,071	03/21/2000	Tayebati	372	64	09/27/1996
	K	6,097,533	08/01/2000	Atlas	359	337	10/21/1997
	L	6,108,112	08/22/2000	Touma	359	110	09/23/1997
	M	6,108,311	08/22/2000	Ramaswami et al.	370	258	04/29/1996
	N	6,147,786	11/14/2000	Pan	359	124	02/20/1998
	O	6,192,173 B1	02/20/2001	Solheim et al.	285	24	06/02/1999

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		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	P	8-163048	21/06/1996	JP	H04J	014/02	X	
	Q	9-326780	16/12/1997	JP	H04J	014/02	X	
	R	98/05995	12/02/1998	WO	G02F	1/00	X	

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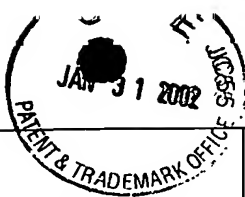
		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
	S	"39.5 Million-Way WDM Broadcast Network Employing Two Stages of Erbium-Doped Fibre Amplifiers," Electronics Letters, Vol. 26, No. 22, pp. 1882-1884	10/25/1990

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	A	6,212,182 B1	04/03/2001	McKeown	370	390	06/27/1996
	B	6,301,274 B1	10/09/2001	Tayebati et al.	372	20	03/30/1999
	C						
	D						
	E						
	F						
	G						
	H						
	I						

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							YES	NO
	J	99/56433	04/11/1999	WO	H04L	12/00	X	
	K	99/22496	06/05/1999	WO	H04L	12/44	X	
	L	00/05832	03/02/2000	WO	G02B	6/26	X	
	M	01/15368 A2	01/03/2001	WO	H04J	14/02	X	
	N	01/18576 A1	15/03/2001	WO	H04J	14/00	X	

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	O	"39-81 Gbit/s, 43-8 Million-Way WDM Broadcast Network with 527 km Range," Electronics Letters, Vol. 27, No. 22, pp. 2051-2053	10/24/1991
	P	Appleton et al., "Modelling WDM Video Distributive Networks," The Institution of Electrical Engineers," pp. 1-4	1993
	Q	Agrawal, "Fiber-Optic Communication Systems," A Wiley-Interscience Publication, The Institute of Optics University of Rochester NY, pp. 284-360	1997
	R	Ford et al., "Fiber-Coupled Variable Attenuator Using a MARS Modulator," Invited Paper, SPIE, Vol. 3226, pp. 86-93	1997
	S	Sadot et al., "Tunable Optical Filters for Dense WDM Networks," IEEE Communications Magazine, pp. 50-55	12/1998

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C	Carena et al., "OPERA: An Optical Packet Experimental Routing Architecture with Label Swapping Capability," <i>Journal of Lightwave Technology</i> , Vol. 16, No. 12, pp. 2135-2145	12/1998
D	Misawa et al. "WDM Knockout Switch with Multi-Output-Port Wavelength-Channel Selectors," <i>Journal of Lightwave Technology</i> , Vol. 16, No. 12, pp. 2212-2219	12/1998
E	Sadot et al., "Optical Switching Speed Requirements for Terabit/Sec Packet Over WDM Networks," <i>ECOC</i>	1999
F	Elhanany et al., "A Novel Tbit/sec Switch Architecture for ATM/WDM High-Speed Networks," <i>IEEE/IEICE ATM Workshop, Japan</i> , pp. 97-101	1999
G	Elhanany et al., "Tbit/s switching scheme for ATM/WDM networks," <i>Electronics Letters</i> , Vol. 35, No. 1, 2 pages	01/07/1999
H	"A New Architecture for Switch and Router Design," <i>PMC-Sierra, Inc.</i> , pp. 1-8	12/22/1999
I	Tsukada et al., "WDM/SCM Broadcast-and-select Architecture for Streaming-media," <i>IEEE</i> , pp. 358-359	2000
J	Pesach et al., "Free-space optical cross-connect switch by use of electroholography," <i>Applied Optics</i> , Vol. 39, No. 5, pp. 746-758	02/10/2000
K	Sadot et al., "Optical Switching Speed Requirements for Terabit/Second Packet Over WDM Networks," <i>IEEE Photonics Technology Letters</i> , Vol. 12, No. 4, pp. 440-442	04/2000
L	Goossen, "MEMS-Based Variable Optical Interference Device," <i>IEEE</i> , Invited MB1, pp. 17-18	08/2000
M	Shrikhande et al., "HORNET: A Packet-Over-WDM Multiple Access Metropolitan Area Ring Network," <i>IEEE Journal on Selected Areas in Communications</i> , Vol. 18, No. 10, pp. 2004-2016	10/2000
N	McKeown, "A quick tutorial on IP Router design," <i>Optics and Routing Seminar</i> , pp. 1-42	10/10/2000
O	McKeown, "How might optics be used in IP routers and the Internet?," <i>Optics and Routing Seminar</i> , pp. 1-36	10/24/2000
P	Chao et al., "An Optical Interconnection Network for Terabit IP Routers," <i>Journal of Lightwave Technology</i> , Vol. 18, No. 12, pp. 2095-2112	12/2000
Q	Elhanany et al., "A Prioritized Packet Scheduling Architecture for Provision of Quality-of-Service in Tbit/sec WDM Networks," <i>IEEE</i> , pp. 695-700	2000
R	Plastow et al., "Tunable lasers key to data-network migration," <i>Lightwave</i> , <a href="http://www.light-wave.com">www.light-wave.com</a> , pp. 148-152	03/2001
S	Dhar, "Seamless Optical Scaling: Enabling a Dynamic Network," <i>Fiberoptic Product News</i>	08/2001

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	DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
C	Dhar et al., "Tunable lasers create dynamic networking capabilities," WDM Solutions, pp. 82, 84, 86, and 88 ✓	09/2001
D	Nowak et al., "Stable supercontinuum generation in short lengths of conventional dispersion-shifted fiber," Department of Electrical Engineering and Computer Science, The University of Michigan, pp. 1-20 ✓	
E	Nowak et al., "Stable 200nm TDM/WDM source based on continuum generation in 2m of fiber," Department of Electrical Engineering and Computer Science, The University of Michigan, pp. 1-13 ✓	
F	"Comparison of Techniques for Multi-Tb/s TDM/WDM Source," The University of Michigan ✓	
G	Bayne et al., "Broadcast-and-select OADM enables low-cost transparency," LIGHTWAVE, www.light.wave.com, pp. 69-74 ✓	12/2001
H	"Corning Discovering Beyond Imagination," Presented at: STARTRAX, 13 pages ✓	2001
I	Fernandez et al., "TCP Switching: Exposing Circuits to IP," Stanford University, pp. 1-6 ✓	
J	Walker et al., "Mechanical Anti-Reflection Switch (MARS) Device for Fiber-In-the-Loop Applications," Invited FA1, pp. 59-60 ✓	
K	McKeown, "Fast Switched Backplane for a Gigabit Switched Router," Department of Electrical Engineering, Stanford University, CA, pp. 1-30 ✓	
L	"Broadcast and Distribution Networks," 7.1.2, pp. 289-297 ✓	
M	McKeown et al., "The Two-Stage Switch," Leland Stanford Junior University, 12 pages ✓	
N	Fernandez, "Where Does Circuit Switching Make Sense In the Internet?," High Performance Networking Group, Stanford University, 19 pages ✓	
O	Pending patent application, USSN 10/004,095, (068069.0114), entitled "Optical Routing Using a Star Switching Fabric," by Islam et al., pp. 1-92 ✓	12/03/2001 Filed
P	Pending provisional patent application, USSN 60/336,779, (068069.0115), entitled "High Speed MEMS Device," by Islam et al., pp. 1- ✓	12/03/2001 Filed
Q	Pending patent application, USSN 10/006,001, (068069.0116), entitled "Optical Routing Using Star Switching Fabric with Reduced Effective Switching Time," by Islam, pp. 1-94 ✓	12/03/2001 Filed
R	Pending patent application, USSN 10/004,996, (068069.0118), entitled "Broadcast and Select Optical Networking," by Islam et al., pp. 1-63 ✓	12/03/2001 Filed

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